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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,105	03/11/2004	Sung-hee Hwang	1793.1194	4574

49455 7590 11/14/2006

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EXAMINER

ALUNKAL, THOMAS D

ART UNIT PAPER NUMBER

2627

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,105

Applicant(s)

HWANG ET AL.

Examiner

Thomas D. Alunkal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-38 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (hereafter Kim) (US 6,564,345) and in view of Lin (US 7,000,152).

Regarding claim 1, Kim discloses a method of managing disc defects occurring on a disc that is a single record layer disc which a lead-in area, a data area, and a lead out area are sequentially formed and a first spare area (Figure 3 which shows the spare area is positioned towards the inner circumference) and a second spare area (Figure 2 which shows the spare area positioned towards the outer circumference), are formed at both ends of the data area, respectively (Figure 10), the method comprising: allocating a first temporary defect management area (TDMA) to at least one of the lead-in area and the lead-out area (see lead-in areas of both Figures 1 and 10. First TDMA corresponds to first DMA in the lead-in area, which has temporary defect management area T-PDL), allocating a second TDMA (Figure 10. Specifically, the T-PDL located in the data area) between the first spare area and a user data area or between the user data area and

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the second spare area (Column 5, lines 1-8 and Figure 10. Second TDMA can be located close to or separated from first TDMA, which can place it between the first spare area and a user data area or between the user data area and the second spare area) and performing disc defect management using the first and second TDMA's (Column 4, lines 24-31).

Kim does not disclose wherein the optical disc is a write-once optical disc. In the same field of endeavor, Lin discloses a method for a write-once recording disc (Column 7, lines 23-26).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the defect management method of Kim to the write-once medium of Lin, motivation being to prohibit any altering of the data, which can result in unwanted errors.

Regarding claim 2, Kim discloses updating and recording temporary management information in the second TDMA whenever a predetermined number or clusters are recorded in the user data area or a verify-after-write method is performed a predetermined number of times (Column 4, lines 43-48), and updating and recording the temporary management information in the first TDMA in recording operation units (Column 4, lines 43-48 and Column 5, lines 27-30).

Regarding claim 3, Kim discloses a method of managing disc defects occurring on a single record layer disc in which has a lead-in area, a data area, and an outer area formed along a recording path and a first spare area (Figure 3) and a second spare area (Figure 2) formed at both ends of the data area, respectively (Figure 10), the

method comprising allocating a first temporary defect management area (TDMA) to at least one of the lead-in area, the lead-out area, and the outer area (see lead-in areas of both Figures 1 and 10. First TDMA corresponds to first DMA in the lead-in area, which has temporary defect management area T-PDL), allocating a second TDMA (Figure 10. Specifically, the T-PDL located in the data area) between the first spare area and a user data area or between the user data area and the fourth spare area (Column 5, lines 1-8 and Figure 10. Second TDMA can be located close to or separated from first TDMA, which can place it between the first spare area and a user data area or between the user data area and the second spare area) and performing disc defect management using the first and second TDMA's (Column 4, lines 24-31).

Kim does not disclose wherein the optical disc is a write-once optical disc nor does Kim disclose wherein the disc is a double record layer disc. In the same field of endeavor, Lin discloses a method for a write-once recording disc (Column 7, lines 23-26) and wherein the write-once recording disc is a multi-layer disc, wherein each layer has a user data (Column 5, lines 25-32).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the defect management method of Kim to the write-once medium of Lin, motivation being to prohibit any altering of the data, which can result in unwanted errors.

Regarding claim 4, Kim discloses wherein the performing disc defect management comprises: updating and recording temporary management information in the second TDMA whenever a predetermined number or clusters are recorded in the

user data area or a verify-after-write method is performed a predetermined number of times (Column 4, lines 43-48), and updating and recording the temporary management information in the first TDMA in recording operation units (Column 4, lines 43-48 and Column 5, lines 27-30).

Regarding claims 5-7, these claims recite limitations similar to those in claims 1-2 and are rejected over the same grounds. It is noted that the first temporary defect management area is the updatable defect management area disclosed by Kim, located in the lead-in area of Figure 10, which in turn has a temporary defect management area, as cited in claims 1-2 above.

Regarding claim 8, Kim discloses wherein the updating the second TDMA further comprises: recording data in predetermined units (It is inherent that the recorded information will be recorded as specified recording units), verifying the recorded data to detect a defective portion of the write once disc where a defect occurs (Column 4, lines 34-37), temporarily storing information pointing to the defective portion and information pointing to a replacement portion for the defective portion in a memory (Column 4, lines 38-40), reading the information stored in the memory and recording the read information as temporary defect information (Column 4, lines 38-42), recording temporary defect management information managing the recorded temporary defect information (Column 4, lines 58-67).

Regarding claim 9, Kim discloses a disc drive comprising: a pickup that records data on and reads data from a disc (Figure 4, Element 10), a controller (Figure 4, Element 110) that controls the pickup to allocate a first TDMA to at least one of a lead-in

area and a lead-out area of the write once disc (see lead-in areas of both Figures 1 and 10. First TDMA corresponds to first DMA in the lead-in area), allocate a second TDMA (Figure 10. Specifically, the T-PDL located in the data area) between a first spare area (Figure 3) and a user data area or between the user data area and a second spare area (Column 5, lines 1-8 and Figure 10. Second TDMA can be located close to or separated from first TDMA, which can place it between the first spare area and a user data area or between the user data area and the second spare area) and perform disc defect management on the disc using allocated first and second TDMA's (Column 4, lines 24-31), wherein the disc is a single record layer disc in which the lead-in area, a data area, and the lead-out area are sequentially formed and the first and second spare areas are respectively formed at both ends of the data area (Figure 10).

Kim does not disclose wherein the optical disc is a write-once optical disc. In the same field of endeavor, Lin discloses a method for a write-once recording disc (Column 7, lines 23-26).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the defect management method of Kim to the write-once medium of Lin, motivation being to prohibit any altering of the data, which can result in unwanted errors.

Regarding claim 10, Kim discloses wherein the controller (Figure 4, Element 110) controls the pickup to update and record temporary management information in the second TDMA whenever a predetermined number of clusters are recorded in the user data area or a verify-after-write method is performed a predetermined number of times

(Column 4, lines 43-48), and controls the pickup to update and record temporary management information in the first TDMA in recording operation units (Column 4, lines 43-48 and Column 5, lines 27-30).

Regarding claims 11-12, these claims recite limitations similar to those in claims 3-4 and are rejected over the same grounds. It is noted that the first temporary defect management area is the updatable defect management area disclosed by Kim, located in the lead-in area of Figure 10, which in turn has a temporary defect management area, as cited in claims 3-4 above.

Regarding claims 13-15, these claims recite limitations similar to those in claims 9-10 and are rejected over the same grounds. It is noted that the first temporary defect management area is the updatable defect management area disclosed by Kim, located in the lead-in area of Figure 10, which in turn has a temporary defect management area, as cited in claims 9-10 above.

Regarding claim 16, Kim discloses the disc drive of claim 13 further comprising a memory (Figure 4, Element 7), wherein the controller (Figure 4, Element 110) controls the pickup to record data in the user data area in predetermined units so as to update the second TDMA (It is inherent that the recorded information will be recorded as specified recording units), verify the recorded data to detect a defective portion of the write once disc where a defect occurs (Column 4, lines 34-37), temporarily store information pointing to the defective portion and information pointing to a replacement portion for the defective portion in the memory (Column 4, lines 38-40), read the information stored in the memory and record the read information as temporary defect

information in the second TDMA when the verify-after-write method is performed a predetermined number of times (Column 4, lines 43-48), and further record temporary defect management information for managing the recorded temporary defect information in the second TDMA (Column 4, lines 58-67).

Regarding claim 17, Kim disclose a disc (Column 5, lines 1-4) that is a single record layer disc in which a lead-in area, a data area, and a lead-out area are sequentially formed and a first spare area (Figure 3) and a second spare area (Figure 2) are sequentially formed in the data area (Figure 10), the disc comprising a defect management area (DMA) formed in at least one of the lead-in area and the lead-out area (Figure 10), a first temporary defect management area (TDMA) formed in at least one of the lead-in area and the lead-out area (Figure 10. Specifically, the T-PDL located in the lead-in area), a second TDMA (Figure 10. Specifically, the T-PDL located in the data area) formed between the first spare area and a user data area or between the user data area and the second spare area (Column 5, lines 1-8 and Figure 10. Second TDMA can be located close to or separated from first TDMA, which can place it between the first spare area and a user data area or between the user data area and the second spare area).

Kim does not disclose wherein the optical disc is a write-once optical disc. In the same field of endeavor, Lin discloses a method for a write-once recording disc (Column 7, lines 23-26).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the defect management method of Kim to the write-once

medium of Lin, motivation being to prohibit any altering of the data, which can result in unwanted errors.

Regarding claim 18, Kim discloses wherein temporary management information is updated and recorded in the second TDMA whenever a predetermined number of clusters are recorded in the user data area of a verify-after-write method is performed a predetermined number of times (Column 4, lines 43-48).

Regarding claim 19, Kim discloses wherein temporary management information is updated and recorded in the first TDMA in recording operation units (Column 4, lines 43-48 and Column 5, lines 27-30).

Regarding claim 20, Kim discloses wherein temporary management information, which is most recently recorded in the first or second TDMA, is recorded in the DMA for disc finalization (Column 9, lines 40-65).

Regarding claim 21, Kim discloses a disc that is a single layer disc including a record layer in which a lead-in area, a data area, and an outer area are sequentially formed along a recording path and a first spare area (Figure 3) and a second spare area (Figure 2) are formed at both ends of the first data area (Figure 10), the disc comprising a DMA formed in at least one of the first and second lead-in area, lead-out area, and outer area (Figure 10), a first TDMA formed in at least one of the lead-in area, the lead-out area, and the outer area (Figure 10. Specifically, the T-PDL located in the lead-in area), a second TDMA (Figure 10. Specifically, the T-PDL located in the data area) formed between the first spare area and a user data area and/or between the fourth spare area and the user data area (Column 5, lines 1-8 and Figure 10. Second

TDMA can be located close to or separated from first TDMA, which can place it between the first spare area and a user data area or between the user data area and the second spare area).

Kim does not disclose wherein the optical disc is a write-once optical disc nor does Kim disclose wherein the disc is a double record layer disc. In the same field of endeavor, Lin discloses a method for a write-once recording disc (Column 7, lines 23-26) and wherein the write-once recording disc is a multi-layer disc, wherein each layer has a user data (Column 5, lines 25-32).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the defect management method of Kim to the write-once medium of Lin, motivation being to prohibit any altering of the data, which can result in unwanted errors.

Regarding claim 22, Kim discloses wherein temporary management information is updated and recorded in the second TDMA whenever a predetermined number of clusters are recorded in the user data area of a verify-after-write method is performed a predetermined number of times (Column 4, lines 43-48).

Regarding claim 23, Kim discloses wherein temporary management information is updated and recorded in the first TDMA in recording operation units (Column 4, lines 43-48 and Column 5, lines 27-30).

Regarding claim 24, Kim discloses wherein temporary management information, which is most recently recorded in the first or second TDMA, is recorded in the DMA for disc finalization (Column 9, lines 40-65).

Regarding claims 25-36, these claims recite limitations similar to those in claims 1-8 and are rejected over the same grounds. It is noted that the first temporary defect management area is the updatable defect management area disclosed by Kim, located in the lead-in area of Figure 10, which in turn has a temporary defect management area, as cited in claims 1-8 above.

Regarding claim 37, Kim discloses wherein the first TDMA and the second TDMA are allocated so that the write once optical disc is compatible with a rewritable disc (Figure 10 and Column 6, lines 4-6) drive, and the disc defect management is performed on the write once optical disc using the rewritable disc drive (Figure 4).

Regarding claim 38, Kim discloses wherein finalizing the optical disc by recording at least one of the first TDMA and the second TDMA to the DMA based on the TDMA having the most current defect management information (Column 9, lines 40-65).

Conclusions

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Park et al (US 6,526,522) discloses a defect management method of an optical recording medium. Ohata et al (US 6,469,978) discloses a rewritable optical disc and defect management method.

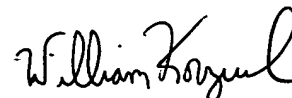
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Korzuch William can be reached on (571)272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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